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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,751	04/14/2004	Kuo-Rong Chen	OP-093000043	5075
46103	7590	08/17/2006	EXAMINER	
HDSL 4331 STEVENS BATTLE LANE FAIRFAX, VA 22033			GUHARAY, KARABI	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/823,751

Applicant(s)

CHEN ET AL.

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment, filed on June 6 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-7 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) 10-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-7, 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

Amendment, filed on June 6, 2006 has been considered and entered.

Claims 2-3 & 8-9 are cancelled.

Claims 16-18 are added.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 & 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 & 16, applicant recite "a proximal surface" and again recite "a proximal surface", in two instances. However, it is not clear that "the proximal surface" mentioned at the end of the claims are referring to which one of the proximal surfaces mentioned earlier.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Peng (US 5710483).

Regarding claim 1, Peng discloses a mesh structure disposed between a plurality of anodes units (conductive phosphor screen 56) and cathode units (51) of a tetraode

Art Unit: 2879

field emission display (see Fig 5 & 11) comprising a first conductive layer (59) to serve as a converging electrode layer (line 1-3 of column 4) having a proximal surface facing the anode units (Fig 5) and a distal surface opposing to the proximal surface, the first conductive plate (59) comprising a plurality of first apertures (holes 45) extending therethrough, a glass plate (dielectric layer 57, 157, formed of silica, line 64 of column 3) formed on the distal surface of the first conductive layer (59), to serve as insulating layer, the glass plate comprises plurality of second apertures (shown in Fig 11) extending therethrough, and a second conductive layer (54) formed on the insulating layer (57) to serve as a gate electrode layer, the second conductive layer (54) having a proximal surface facing the cathode units (51) and a distal surface opposing the proximal surface, wherein the second conductive layer includes a plurality of third apertures (55) extending therethrough and aligned with first and second apertures (Figs 5, 8-9 & 11), wherein each second aperture covers a plurality of the first apertures (45, lines 45 of column 3-line 58 of column 4).

Regarding claim 4, Peng discloses that each third aperture (55) is aligned with one corresponding first aperture (45, see Fig 5).

Regarding claim 6, Peng discloses a mesh structure of a tetra-polar field emission display (Fig 5 & 11 and title) comprising a converging electrode layer (59) having an array of first apertures (45) extending therethrough; an insulation layer (57, 157) having one side adjacent to the converging electrode layer, the insulation layer having a plurality of second apertures aligned with the first apertures (see Fig 11); and

Art Unit: 2879

a gate layer (54) including a plurality of conductive lines formed on the insulation layer (57, 157) at one side opposite to the side adjacent to the converging electrode (59) layer, wherein each of the conductive lines is aligned with a portion (44) of the converging electrode layer between one pair of neighboring rows of the first apertures (44 is between two adjacent 45), wherein each second aperture covers a plurality of the first apertures (45, lines 45 of column 3-line 58 of column 4).

Claims 1, 4-5, 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al. (US 6057636).

Regarding claim 1, Sakai et al. disclose a mesh structure disposed between a plurality of anodes units (16) and cathode units (11) of a tetraode field emission display (Fig 12) comprising a first conductive layer (inducing electrode 40) to serve as a converging electrode layer having a proximal surface facing the anode units (16) and a distal surface opposing to the proximal surface, the first conductive plate (40) comprising a plurality of first apertures extending therethrough, a glass plate (dielectric layer 41 made of silica) formed on the distal surface of the first conductive layer (40), to serve as insulating layer, the glass plate comprises plurality of second apertures extending therethrough , and a second conductive layer (control electrode 14) formed on the insulating layer (41) to serve as a gate electrode layer, the second conductive layer (14) having a proximal surface facing the cathode units (11) and a distal surface opposing the proximal surface , wherein the second conductive layer includes a plurality of third apertures extending therethrough and aligned with first and second apertures

(Fig 12), wherein each second aperture covers a plurality of the first apertures (see Fig 12, lines 4-31 of column 11).

Regarding claim 4, Sakai et al. disclose that each third aperture is aligned with one corresponding first aperture (Fig 12).

Regarding claim 5, Sakai et al. disclose that each third aperture covers an opening range of a plurality of the first apertures (see Fig 12).

Regarding claim 16, Sakai et al. disclose a mesh structure disposed between a plurality of anodes units (16) and cathode units (11, Fig 12) comprising a first conductive layer (inducing electrode 40) to serve as a converging electrode layer having a proximal surface facing the anode units (16) and a distal surface opposing to the proximal surface, the first conductive plate (40) comprising a plurality of first apertures extending therethrough, a glass plate (dielectric layer 41 made of silica) formed on the distal surface of the first conductive layer (40), to serve as insulating layer, the glass plate comprises plurality of second apertures extending therethrough, and a second conductive layer (14) formed on the insulating layer (41) to serve as a gate electrode layer, the second conductive layer (14) having a proximal surface facing the cathode units (11) and a distal surface opposing the proximal surface, wherein the second conductive layer includes a plurality of third apertures extending therethrough and aligned with first and second apertures (Fig 12), wherein each of the third aperture (aperture between two sections of 14) covers a plurality of the first apertures (see Fig 12).

Regarding claims 17, Sakai et al. disclose that each second aperture is aligned with one corresponding first aperture (see Fig 12).

Regarding claim 18, Sakai et al. disclose that each second aperture (apertures in the insulating later 41) covers an opening range of a plurality of the first apertures (see Fig 12).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Peng, as applied to claim 6 above, and further in view of Russ et al. (US 6515429).

Regarding claim 7, Peng discloses all the limitations except for the gate layer being a hollow frame within which conductive lines extend.

However, in the same field of Field emission display (Fig 9), Russ discloses a gate structure (602 of Fig 6) comprising a hollow frame within which gate wires (604) are extending. Russ further teaches that such gate structure provides an analog like variable resolution of the display (lines 60-67 of column 5).

Art Unit: 2879

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to gate structure as disclosed by Russ et al. in the device of Peng, since this will improve the resolution of the display.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*K. Guharay*  
Karabi Guharay  
Primary Examiner  
Art Unit 2879  
8/10/06